

**REMARKS****Status of the Claims**

Claims 1, 3-11, 13-21, and 23-30 are currently present in the Application, and claims 1, 11, and 21 are independent claims. Claims 1, 3-5, 7, 10-11, 13-15, 17-18, 20-21, 23-25, 27, and 29-30 have been amended, no claims have been cancelled, and no claims have been added in this response.

**Examiner Interview**

Applicants note with appreciation the telephonic interview conducted between Applicants' representative and the Examiner on July 23, 2007. During the telephonic interview, the Examiner and Applicants' representative discussed amending Applicants' claims to overcome the 101 and 112 rejections. In addition, the Examiner and Applicants' representative discussed the 103 references. Particularly, the Examiner agreed that the combination of the 103 references does not teach or suggest each and every element of Applicants' invention, and that the Examiner may perform another search once the Examiner receives Applicants' response. Since the claim amendments presented in this response are to overcome the 101 and 112 rejections, the Examiner also agreed that Applicants would receive another non-final Office Action if a subsequent search identifies new art.

**Drawings**

Applicants note with appreciation the Examiner's acceptance of Applicants' formal drawings filed concurrently with the application.

**Claim Rejections Under 35 U.S.C. § 101**

Claims 1, 3-11, 13-21, and 23-30 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Applicants have amended claims 1, 3-11, 13-21, and 23-30 accordingly, and request removal of the 101 rejection to these claims. Support for such amendments may be found in Applicants'

specification on page 5, lines 7-10 and page 54, lines 22-25 and, therefore, no new matter is added with such amendment.

### **Claim Rejections Under 35 U.S.C. § 112**

Claims 1, 3-11, 13-21, and 23-30 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended claims 1, 3-11, 13-21, and 23-30 accordingly, and request removal of the 112 rejection to these claims. Support for such amendments are found in Applicants' specification on page 4, lines 2-14, page 46, lines 1-7, and Figure 43 that shows PU 4300 including PU Scheduler 4315 and SPU Scheduler 4340. Therefore, no new matter is added with such amendment.

### **Claim Objections**

Claims 3-5, 7, 13-15, 17-18, 20, 23-25, and 27 stand objected to because they depend upon canceled claims. Applicants have amended claims 3-5, 7, 13-15, 17-18, 20, 23-25, and 27 accordingly, and request removal of the objection to these claims.

### **Claim Rejections - Alleged Anticipation Under 35 U.S.C. § 103**

Claims 1, 3-11, 13-21, and 23-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Valencia (U.S. Patent No. 5,185,861, hereinafter "Valencia") in view of Hoffman et al. (U.S. Patent No. 4,394,727, hereinafter "Hoffman"). Applicants respectfully traverse these rejections.

Applicants independent claim 1 is a method claim for asymmetrically multithreading tasks in a computer environment that includes a plurality of dissimilar processors with limitations comprising:

- scheduling operation of a plurality of first tasks adapted to be executed by a first type of processor from the plurality of dissimilar processors, the scheduling performed by a first scheduler that maintains a first run queue that includes data corresponding to the first tasks;

- in response to the scheduling operation of the plurality of first tasks by the first scheduler, inserting the plurality of first tasks in the first run queue;
- scheduling operation of a plurality of second tasks adapted to be executed by a second type of processor from the plurality of dissimilar processors, the scheduling performed by a second scheduler that maintains a second run queue that includes data corresponding to the second tasks;
- in response to the scheduling operation of the plurality of second tasks by the second scheduler, inserting the plurality of second tasks in the second run queue; and
- wherein the first scheduler and the second scheduler are both located on a first processor that is the first type of processor.

Applicants' invention uses two separate schedulers, both residing on a first processor, to schedule tasks on two different processor types. The Office Action states that Valencia teaches the use of a second scheduler to schedule a plurality of second tasks on a second processor type. However, after further review, Valencia does not teach such limitation. Rather, Valencia teaches the use of a single scheduler to schedule tasks on multiple processors that are the same processor type. Valencia states:

**A scheduler** determines which engine will run a process, with a highest priority process running first. On a multi-processor system, the concept of priority is extended to run the highest n number of priority processes on the M number of engines available, where  $m=n$  unless some of the engines are idle." (col. 1, lines 60-65, emphasis added)

"A computing system (50) includes N number of **symmetrical** computing engines having N number of cache memories joined by a system bus (12)." (Abstract, emphasis added)

As can be seen from the above excerpt, Valencia teaches the use of a single scheduler to schedule tasks among multiple processors that are the same processor type. The Office Action does not suggest that Hoffman teaches or suggests the use of two different schedulers to schedule different tasks on different processor types, and indeed Hoffman does not teach such limitation. Therefore, neither Valencia nor Hoffman, either alone or in combination with each other, teach or suggest "*scheduling*

*operation of a plurality of first tasks..., the scheduling performed by a first scheduler that maintains a first run queue that includes data corresponding to the first tasks" and "scheduling operation of a plurality of second tasks ..., the scheduling performed by a **second scheduler that maintains a second run queue that includes data corresponding to the second tasks**" as claimed by Applicants.*

As such, Applicants assert, and the Examiner agreed, that the Office Action fails to establish a prima facie case of obviousness under § 103 as set forth in § 103 and the MPEP. MPEP 2142 states that:

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. **Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.**"

Since neither Valencia nor Hoffman, either alone or in combination with each other, teach or suggest all the limitations included in Applicants' claim 1, claim 1 is allowable over Valencia in view of Hoffman. Claim 11 is an information handling system claim including similar limitations as claim 1 and, therefore, is allowable for at least the same reasons that claim 1 is allowable. Claim 21 is a computer program product claim including similar limitations as claim 1 and, therefore, is allowable for at least the same reasons that claim 1 is allowable.

Each of claims 3-10, 13-20, and 23-30 are dependent, either directly or indirectly, upon one of the allowable independent claims 1, 11, or 21. Therefore, each of claims 3-10, 13-20, and 23-30 are allowable for at least the same reasons that their respective independent claims are allowable.

### **Conclusion**

As a result of the foregoing, it is asserted by Applicants that the remaining claims in the Application are in condition for allowance, and Applicants respectfully request an early allowance of such claims.

Applicants respectfully request that the Examiner contact the Applicants' attorney listed below if the Examiner believes that such a discussion would be helpful in resolving any remaining questions or issues related to this Application.

Respectfully submitted,

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